

Working Group 2 Summary

(Communication & Collaborative Tools)

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&
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Attendees: Todd Hays, Don Hartill, Ray Helmke (Cornell, Ops etc), Noboru (KEKB/JAERI, ops), Ron Chestnut (SLAC controls, former experimental physicist), Judy Olsen (Umich, social), Sveta Shoshina (Tech-X, plasma physicist/coder), Wolfgang (DESY, exp phy/CS/controls), Kay Rehlich, Kai Desler (FNAL, DESY/etc remote ops), Michael Spata (JeffLab, ops head), Dan Serletti (ORNL/SNS, controls/ops from APS), Deb Agawal (LBL, collab CS), Bob Mannix (UK, particle physicist, controls group leader), Bob Mau, Carillon (US DOE, US/LHC/ATLAS/CMS from AGS ops), Travis Shrey (BNL ops), Greg Marr (BNL ops, senior OC), Peter Ingrassia (BNL head of ops), Roger Erickson (physicist, former Cornell, manager of accel ops at SLAC), Don Dilhan (APS/Argonne NP/AP/Controls, APS moving to fully commissioned operations phase), Tom Himmel (SLAC, Exp part phys/AP, specialize in controls/ops), Mike Lamont (CERN, Operations group LEP/LHC operations), Francesco Rugiero (CERN, AP/LEP/LHC), Paul Avery (Florida, HEP/computing/Grid), Satoshi Ozaki (NP/AP management at Tristan/RHIC – strong believer of international collaborations).

Initial Discussions (Tuesday Afternoon)

- Look at what people actually do in control rooms - Operations people will provide reality check
- Security issues
 - safety both personnel and machine
 - network
 - conflict between current video conf. and network security
 - VPN's etc.
- Social issues
 - privacy, trust, team building, etc.....
- Comparison of different operations modes
 - FNAL, SLAC, KEK, and DESY

Current tools (Wednesday Afternoon)

- Access Grid
 - has good quality video and audio
 - requires a lot of hand holding
 - as example Deb missed 1/3 of meeting when diy
 - requires good quality components
 - four computers are required
- White Boards and Smart Boards
 - electronic capture of a white board
 - Ebeam (\$500 to \$600)
 - ultrasonic system on a whiteboard
 - doesn't permit notes on Excel
 - snap shot not an object
 - Smart Board
 - permits notes on Excel
 - treats as objects
 - works on screen up to 63" plasma
 - \$20k price tag



Collaboration Tools for the GAN

Report of the August 26, 2002 workshop @ Berkeley Lab

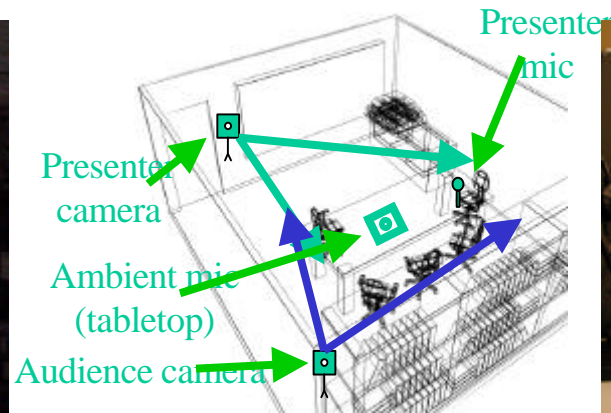
Deb Agarwal Judy Olson

LBL

UMich

URL - <http://www-itg.lbl.gov/Collaboratories/GANMtg/>

Access Grid Nodes (ANL)



- VRVS
 - supports
 - VIC
 - RAT3
 - RAT4
 - QuickTime Player
 - H.323
 - VNC
 - VNC Proxy
 - Camera Control
 - Developers very responsive (<2 min)
- Chat
 - surprised that we don't use
- Electronic notebooks
 - concern about rewriting history
 - public access concerns
 - drug company consortium-legal issues
 - PNNL scheme enables electronic signatures

Use at BNL

- New idea for RHIC 2003 run
 - Station in MCR for Operations Coordinator
 - Station in large conference room for 9am meeting broadcast
 - Station in experimenter control rooms for broadcast of experimenter meetings (PHENIX, STAR(?))
 - Station at Tandem for MCR/Tandem communication

Electronic Notebook (PNNL)

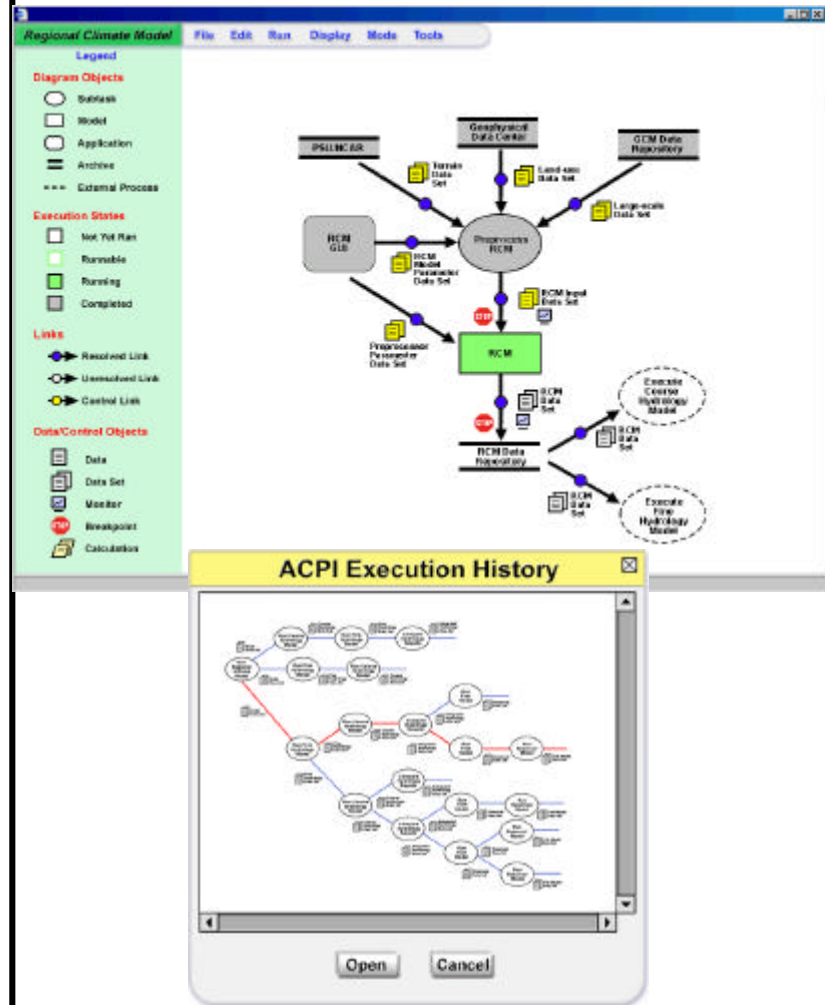
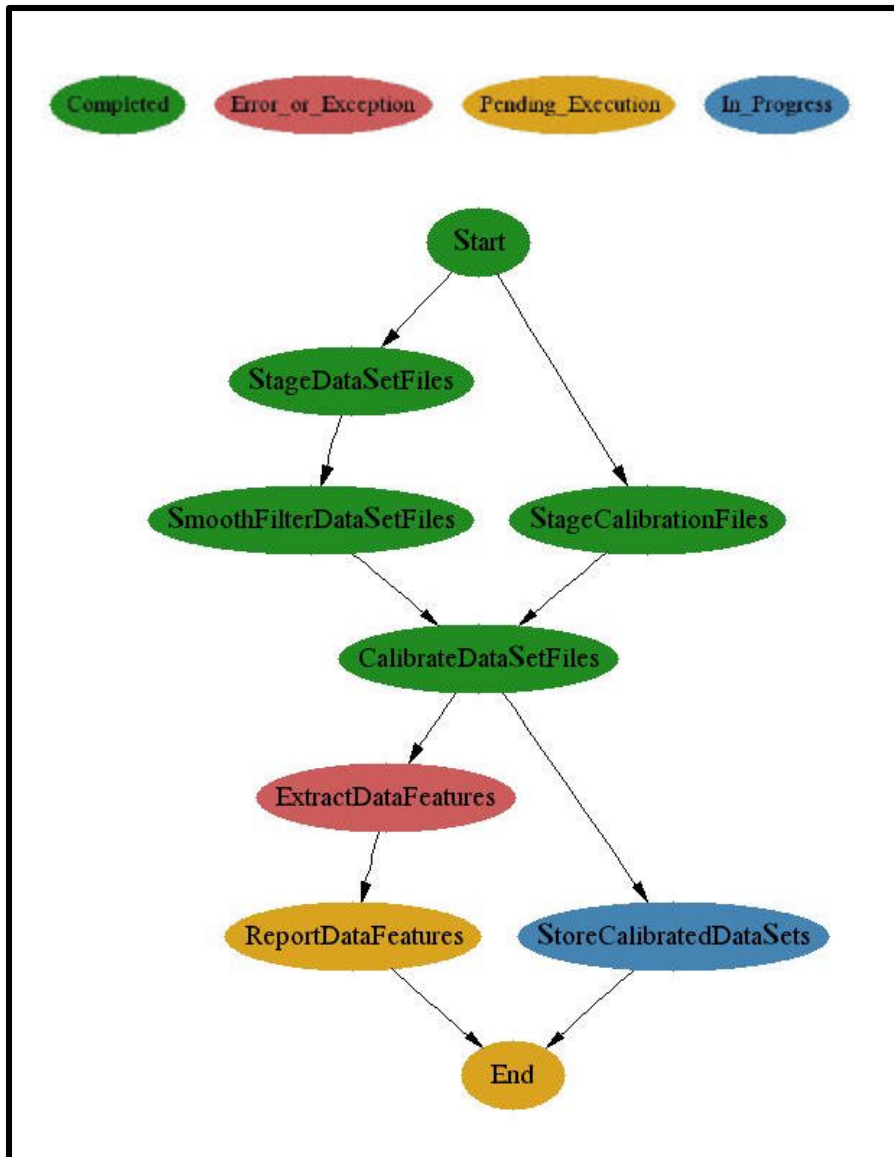
The screenshot displays the EMSL Electronic Laboratory Notebook (NMR Virtual Facility Notebook) interface in Netscape. The main window shows a "Table of Contents" with a list of entries including "Chemical Shift Lists", "DOF (DSS) Experiment", "EMSL MEF Outside One Response", "NMR Equipment Parameters", "Proposal Text", "Related Data", "EMC 40 Pulse", "Out of Box", "EMC D experiment on the 600MHz", and "Comparison of HMC D 107 data to Jeff's HSQC".

A "Notebook Entry Digital Signatures" window is open, showing a digital signature for "James D Myers" with a "Signature Valid" and "Certificate Valid" status.

The main window also displays a "Page: Comparison of HMC D 107 data to Jeff's HSQC" with a "Download Data" button. Below the page title, there are two NMR spectra plots. The left plot is labeled "200 D2 (points)" and the right plot is labeled "200 D2 (points)".

- WorkFlow
 - workflow process
 - monitor progress
- Security
 - PKI (Public Key Infrastructure)
 - Kerberos
 - VPN's
 - Authorization Services
 - lots of discussion

Workflow (LBNL,PNNL)



Security

- Public Key Infrastructure
 - Grid Security Infrastructure
- Kerberos
- Virtual Private Network
- Username/password

Features

- Identification
- Access Control/Authorization
- Guests
- Privacy
- Vulnerabilities
- Ease of use

URLs

Workshop

<http://www-itg.lbl.gov/Collaboratories/GANMtg>

DOE National Collaboratories Program

<http://doecollaboratory.pnl.gov/>

CREW

<http://www.crew.umich.edu>

LBNL Collaboration Technologies

<http://www-itg.lbl.gov/Collaboratories/>

Operations Realities (Thursday Morning)

- Need strong central management
- Information control is very important
- Need uniform standard for ops group makeup
- Continuous day shift might not be the most efficient
- MD/studies protocol
- Need strong Central Run Coordinator at site close to maintenance personnel
- Consistent training and on the job training.

- Host of personnel and radiation safety issues
- Need to include funding as line item in construction budget.
- Need formal ops procedures for fault recovery, emergency response, etc.
-

"Remote operations appear feasible, but given that some level of local on-site, 24/7 support is necessary, why not implement a concept with a central control room and full operations/support staff on-site with remote "consoles" distributed to enable remote Accelerator/Machine Development and expert troubleshooting/monitoring"

Social Issues (Thursday Afternoon)

- Privacy
 - who gets to read elog
 - need a back channel for private conversations
 - who is watching or who attends electronic meetings
 - calendars with limited persistence
 - instant messenger possible to turn off
- Reciprocity
 - can only see me if I can see you
 - ditto for audio

- Trust
 - combination of benevolence and competence
 - how do you establish it (and loose it)
 - need personal contact
 - rotation among ops groups could generate trust
- Ease of Use (and Maintainability and upgrade)
 - similar to keeping networks running
- Agreed Rules of the Road
 - need to know what is expected
 - making decisions and flexible consensus
- Culture
 - extremely important
 - need to understand cultural background of colleagues that you are working with

- Adoption
 - how do you design and adopt the new GAN culture?
- Training
 - over the shoulder training is much more difficult.
 - video conferencing has actually increased travel but for different people
 - documentation is critical to success of this approach to operating an accelerator
- Informal meetings
 - Video wall may help enable these meetings
 - needs more attention

Security Discussions

- Necessary evil in our world
- Accelerator Management must set the security policies
- Need outside independent audit
- Security islands probably required within the system.

GAN Security Action Items

- **Define *Security Ownership***
 - Needs GAN Organization Concept
 - Initially, defaults to Host Lab
- **Define *Security Strategy***
 - Needs committee representing relevant parties
- **Create *Security Organization***
 - Default = Start with Host Lab's?

Next Steps

- Complete the studies that we have started to see if likely technology will enable full remote operation in an acceptable manner
- Explore feasibility of holding the next workshop like this as a remote operation
- Continue to be very sensitive to the social issues involved in remote collaboration and operation
- Continue the dialog with current operations staff at the laboratories as a reality check
- Make sure that we satisfy the likely security requirements of the site laboratory with our proposed solutions

Conclusions

- Likely technology at the time of operation of accelerator should be adequate
- Social aspects will generate new behavior patterns
- Casual conversations are probably the most difficult to enable
- Pleased to hear that FNAL Ops and BNL Ops are eager to try video conference link between control rooms
- Echo WG1 concern about what GAN is
- Optimistic that it will actually work